

OPEN-AIR SCHOOLS AND OPEN-WINDOW ROOMS— HOW TO BUILD AND EQUIP THEM

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Chicago



ALLEGIANCE TO THE FLAG—HEALTH RIGHTS TO CHILDREN

Reprinted from
JOURNAL OF OUTDOOR LIFE, 289 FOURTH AVE., NEW YORK
Issues of September and October, 1916

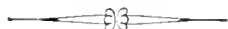


"SAY, DOCTOR, HOW SICK'S A FELLER GOT TO BE TO GET IN THIS
'ERE SCHOOL?"

The whole question was stated in a nutshell by an Elizabeth McCormick open-air school pupil who brought a companion whom he considered "skinny" to the doctor with the above query.

OPEN-AIR SCHOOLS AND OPEN-WINDOW ROOMS —HOW TO BUILD AND EQUIP THEM

SHERMAN C. KINGSLEY, DIRECTOR ELIZABETH McCORMICK MEMORIAL FUND



Childhood is the golden age of opportunity for health work, and the public school, the greatest children's agency in the world, is the most strategic field for health service.

Twenty million children are to-day in the schools of the United States under the direct supervision, observation, instruction, and control of school teachers and school boards. They will in turn, be in charge of the affairs of our country to-morrow. According as we nurture, instruct, guide, understand, develop and minister to the bodies and minds of these boys and girls of to-

day they will be strong or weak, efficient or inefficient, workers or out-of-works, tax-payers or tax absorbers, citizen assets or citizen liabilities in that to-morrow which already impresses us with its new occasions and new duties, its call for a larger fitness and a deeper sense of the meaning of country and flag.

The public school in our country is practically



THE FIRST OPEN-AIR SCHOOL IN THE UNITED STATES, PROVIDENCE, R. I. 1908

A remodeled room in an unused school-house. Windows are hinged at top and swing inward

the only governmental agency that in any consecutive and sustained way concerns itself with the direction or regulation of individuals in their daily affairs. We are supervised less than the citizens of perhaps any other nation of equal rank in the world.

On the question of schools and the necessity of educational preparation for the duties of citizenship, however, we have a policy so well defined that it has been embodied in our compulsory education laws. Through these enactments we require every child born or reared in the United States to spend from six to ten of his most important years in the school-room under the tutelage of duly-chosen representatives of government. These laws de-

the children of our country ever attain this minimum standard and that hundreds of thousands of them quit school with only a third, fourth, fifth or sixth grade mental preparation, and furthermore with a physical equipment that is often less adequate than the mental. The early-falling-out-of-school problem is challenging attention as never before; we are becoming more interested in the causes because we better understand the consequences. Our Juvenile Courts, which now deal with about 100,000 children annually, have emphasized certain phases of this problem and the revelation and experiences growing out of this work have demanded attention and compelled action. There has also been more painstaking case work on the part of char-



THE FOREST SCHOOL, CHARLOTTENBURG, GERMANY

The first open-air school. Established in 1904

mand an aggregate attendance of five hours a day from each of the 20,000,000 school children, a total of 11,415 years each school day, or 2,283,000 years every twelvemonth. Our people believe that a grammar-school education should be the minimum academic foundation for citizenship in this country, and accordingly we have made the schools accessible for all the children, and have likewise ordained that each child must avail himself of these educational privileges. Having set this machinery in motion, we have indulged ourselves in the comfortable assurance that our universal education theories automatically become accomplished facts with the passing of the school years.

We know now, however, that less than half

itable organizations, settlements, boys' clubs, visiting-nurse associations and other similar bodies. This work has likewise acquainted an increasing host of interested people with the health and economic problems of childhood.

Perhaps the greatest contribution in this awakening to the needs of school children has come through the work of medical inspection and nursing service in the public schools. Through this activity we have learned that fully sixty per cent. of all school children have physical defects serious enough to interfere with school work and to need attention. Moreover, a number of cities have made more careful and detailed school-children-health studies than are usually comprehended in medical inspection

service, and where this has been done it is found that from two to ten per cent. of all the school children, or something like 1,000,000 school children in the United States, have physical defects of so serious a nature as to make their school work practically useless unless something is done to meet their needs in a more discriminating and effectual manner than is possible through the usual school régime.

Thus we have learned that physical defects, ill health, under-nourishment, anemia, and unfortunate environment not only prevent children from getting what has been munificently ordained and provided for them through the public school, but it also robs them of their chance in life and lays the foundation for difficulties and disorders which overtake them at a time when they wish to take their respective places in the world. Physicians are telling us with greater frequency that implantations of tuberculosis, and many other diseases as well, take place largely in childhood. It is stated that a daily average of about 3,000,000 people must be dealt with in the charitable, correctional, medical and other institutions and agencies in this country, and that it costs about \$200,000,000 a year. Physicians, nurses, economists and

social workers generally realize more and more keenly that only a few years back these same people were boys and girls who sat in school seats and who were thus under the direct scrutiny of the public. There was an opportunity then to have done the constructive and preventive thing which now must be the remedial, the palliative or complete custodial care.

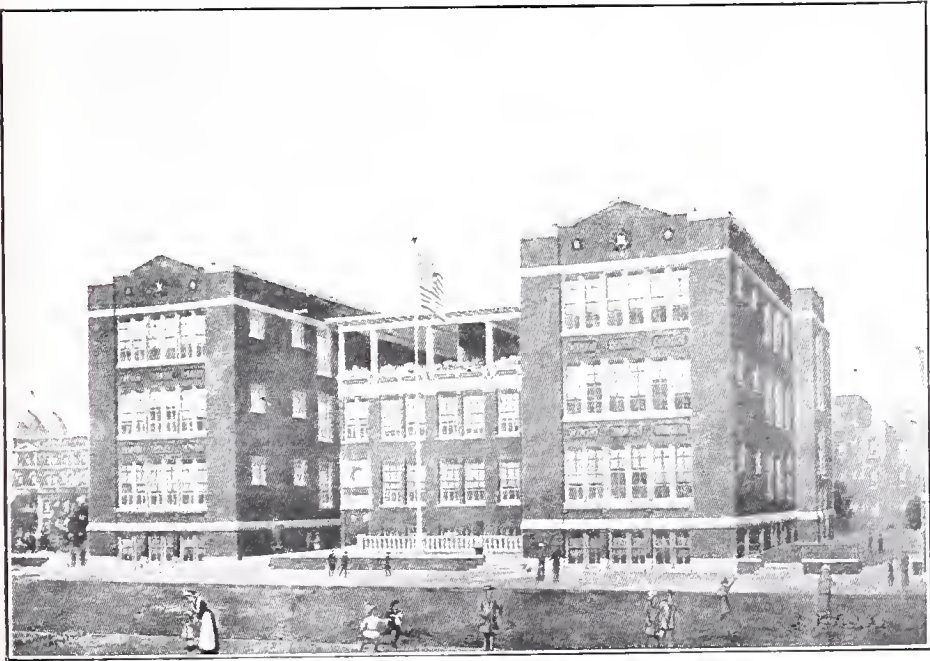
The following information, taken from a booklet by Lilian Brandt,¹ illustrates this phase of the subject as it relates to tuberculosis, the disease which is in such a large sense a sort of residuary legatee for all kinds of denials, of neglected disorders, of lost health opportunities of childhood. Certain charts show by different age periods the percentage which deaths from

tuberculosis bear to all deaths. From age 10 to 19, in New York City (and this is fairly representative of the whole country), 28 per cent. of all deaths; from age 20 to 29, deaths from tuberculosis were 37.8 per cent. of all deaths in this age period. This chart indicates that fully half of the persons dying from tuberculosis are cut off before their thirtieth year. Since there are about 150,000 deaths annually in this country, it would follow,

¹ Brandt, Lilian. "Facts About Tuberculosis," The New York School of Philanthropy, rev. ed., Feb'y, 1916.



CHERRY OPEN-AIR SCHOOL. TOLEDO, OHIO
Capacity 60 children, 30 of whom remain at school all night



THE EAGLE SCHOOL, CLEVELAND, OHIO
Four open-air rooms on the roof. Ample playgrounds protected by heavy wire nettings

if these percentages are representative that, something like 7500 people die each year in the United States from this one disease, who are either of school age or below, or where only a comparatively few years had elapsed since they were pupils in school. Some of these were cut off before they had had an opportunity to profit by the education which was furnished by the state, others were just beginning their juvenile adventures in industry; still others were taken at a time when the consequences were most crucial both to their families and to the community, for they had to leave newly established homes and little children.

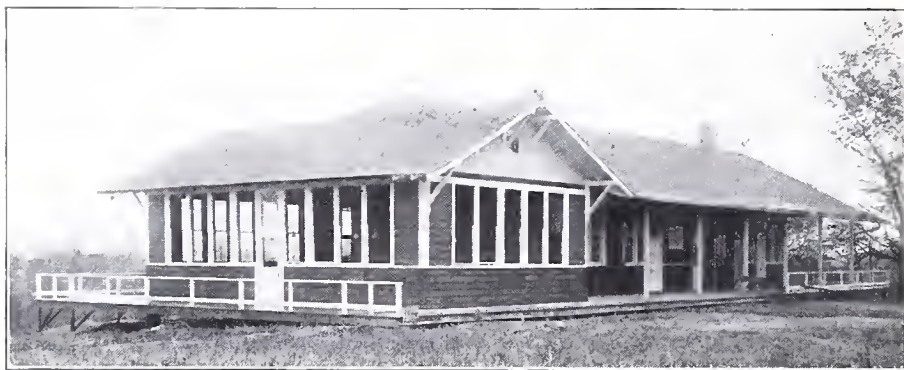
The open-air school is one of the newer instrumentalities that have been called into existence to help meet such conditions. The whole experience of social workers is that emphasis should be placed on preventive and constructive work. We are trying to get away from the older order that waited until people had become victims of chronic illness or until they are finished dependents or delinquents, until the trouble has happened which necessitates the building, equipment and administration of almshouses, jails, hospitals, sanitarium and other institutions for treatment or custodial care. An army of individual workers and associations are trying not

only to stamp out tuberculosis, but are combatting other diseases as well. We now know that the secret of winning the fight, if it is to be won at all, is to get at it early, that the time to spend money and service on the individual is when he is young. The foundations of health, like those of character, are laid in childhood.

Open-air school advocates know that the greatest field for service in this line in the United States is with the 20,000,000 school children, and the time is while they are under the observation, direction and control of the school-teacher and the school board, during the never-ending march, when we pass all the children of the United States in review. The movement is challenging the attention of educators, parents and citizens; it is trying to create an attitude toward the conditions and needs of children that will get for them that discriminating, thorough-going attention which the problem demands, and at a time

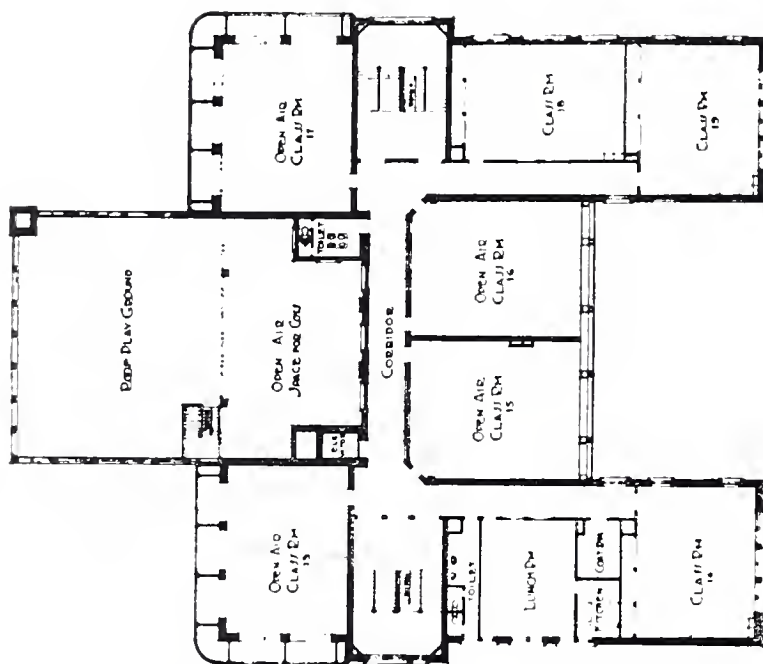
when the greatest good can be done and the maximum results accomplished. It seeks to apply the principle of thrift to education and to health work.

In discussing this subject of building and equipment for open-air schools, we perhaps should first of all set before ourselves the objects to be accomplished, the problems, the features that have been found helpful in getting results and which should continue to be a part of open-air school activities, and shall perhaps be most helpful if we can define



OPEN-AIR SCHOOL BUILDING, COLUMBUS, OHIO

An 18-foot porch surrounds the building



FOURTH FLOOR PLAN OF EAGLE SCHOOL, CLEVELAND, OHIO



THE EDWARD MOTT MOORE OPEN-AIR SCHOOL, ROCHESTER, N. Y.

Located in a 150-acre park, eight acres of which have been given by the city exclusively to the school. Easily accessible by street-car.
Capacity 65 children. Addition planned to care for 60 more

the general principles and methods which should govern the work rather than try to give specifications, materials, prices, etc., for any given type of building or line of equipment. Our country offers such differences of climate and varieties of building material, sites, etc., that what would be appropriate plant and equipment for one community would not answer at all in another. Each community must get at the problem and the features needed and make provision for them from its own resources.

The following features are usually found in open-air schools, and buildings and equipment to be satisfactory must lend themselves to such activities:

1. A thorough understanding of the child, both physically and mentally; the school should provide opportunity and facilities for adequate medical and nursing service.
2. Food: The anemic and under-nourished condition of physically subnormal children is often due to insufficient or improper food. The open-air school undertakes to supply this lack by furnishing food in sufficient quantity and variety and wholesomely cooked.
3. Rest: Many of the children are suffering from conditions which call for an unusual amount of rest. The irregular hours and lack of adequate sleep among children is well known. Open-air schools gener-

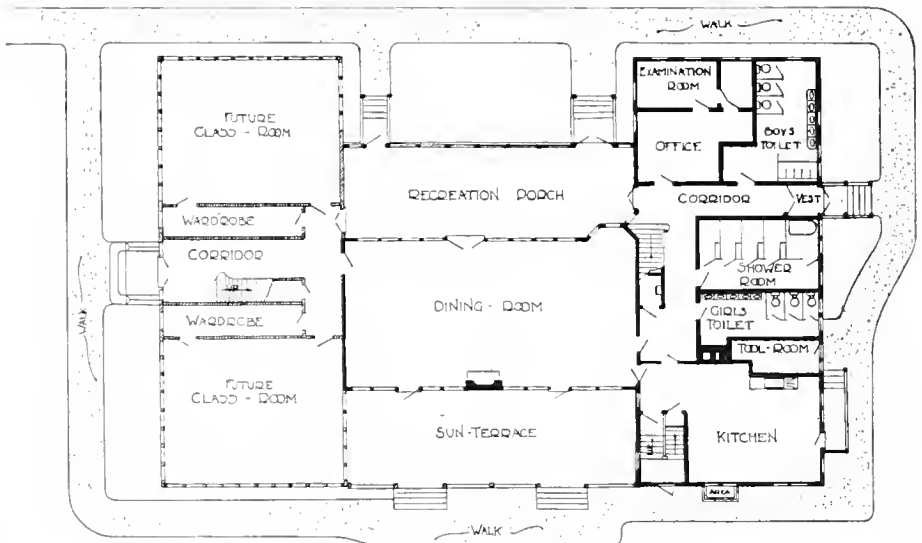
ally have adopted the plan of giving all the children a period of an hour or more rest each day.

4. Personal hygiene is emphasized: Cleaning and care of teeth, bathing, regular habits of cleanliness, regularity of meals, the acquiring of a taste for proper kinds of food and the right habits of eating.
5. Fresh air and sunshine: The open-air school aims to give the child the advantage and mental stimulus afforded by adequate fresh air and sunshine.
6. Curricula: The work in the open-air school is generally characterized by freedom and elasticity; manual training, gardening, and handwork of different kinds, nature study; outdoor exercise.
7. Individualization: Open-air schools for anemic and under-nourished children aim to give a smaller number of children to each teacher; from twenty to thirty has been agreed upon as the proper size of the class. The aim of the open-air school

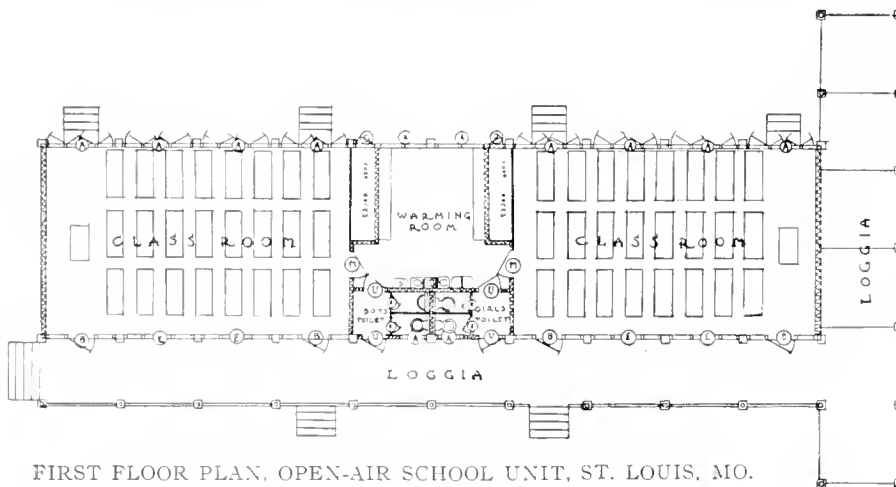
is "to weave together these different features in a process of education and a hygienic way of life."

The end to be kept constantly in mind in the building and equipment of open-air schools should be to provide facilities for these lines of work.

In his Annual Report for 1912, the Chief Medical Officer of the Board



FIRST FLOOR PLAN, ROCHESTER OPEN-AIR SCHOOL



FIRST FLOOR PLAN, OPEN-AIR SCHOOL UNIT, ST. LOUIS, MO.
STEAM PIPES UNDER FLOOR. See illustration page 17

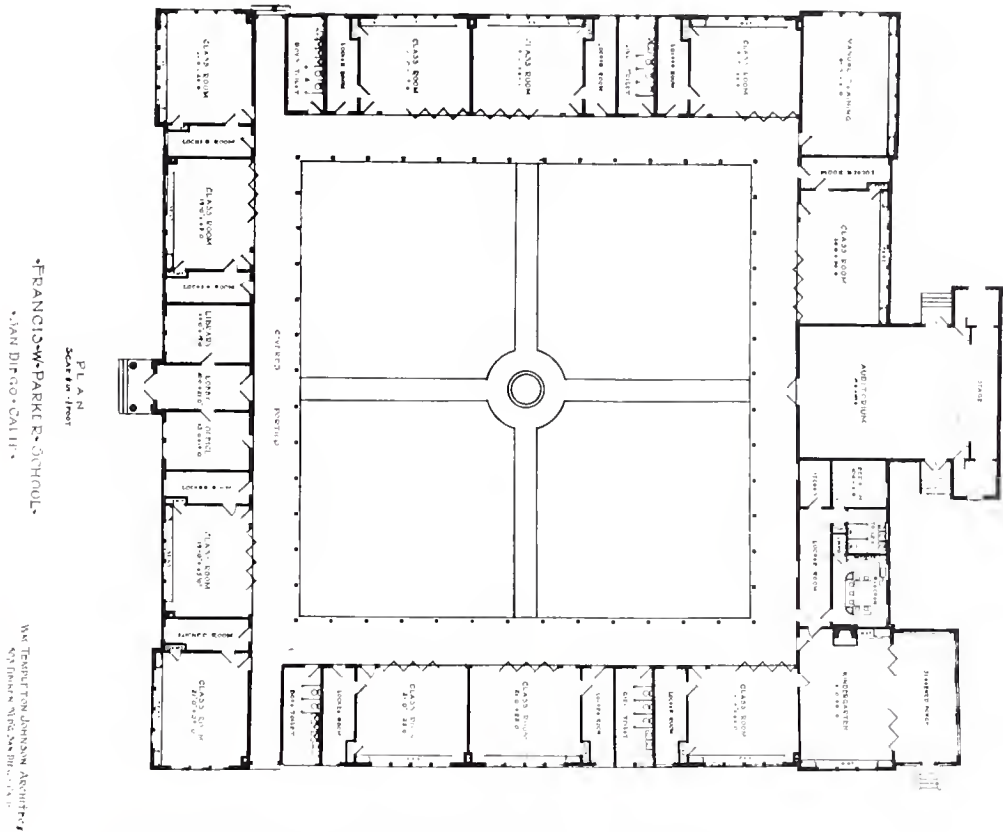
of Education of London outlines what, in his opinion, constitute suitable features for open-air school work. This statement deserves repetition here. The lines he lays down are generally observed in open-air school work in Europe:

“The site should be sheltered, though fairly open and easily accessible. One acre of land should be available for, say, fifty children. The school premises should consist of administrative buildings, class-rooms, resting-shed. “Open-air schools should be inexpensive and constructed in such a way as to allow of

(c) Every open-air school should be properly provided with school shower-baths.”

This same report goes on to say, in regard to the teaching:

- “The school staff desirable is:
 “(a) A head teacher for, say, 120 to 150 children, as with a larger number the head teacher cannot give the individual attention absolutely necessary in these schools.
 “(b) A teacher for every 25 children in average attendance, and for 20 in the lowest



FRANCIS W. PARKER SCHOOL, SAN DIEGO, CALIF.
 First Floor Plan

ventilation and the maximum admission of fresh air, with adequate precaution against stormy weather; in winter, some means of heating is advisable.
 “The class-rooms must be adapted for the various educational methods of open-air schools, including manual work. They should be constructed for twenty-five pupils. Single desks and chairs may be provided for some of the children, and tables and chairs for the others.

- “The special accommodation of an administrative kind which is required is:
 (a) Kitchen and dining-room.
 (b) Doctors' and nurses' room.

- classes. The teacher should have special knowledge of nature study, manual training, hygiene and physical exercise
 “(c) A fully qualified nurse.
 “(d) The necessary attendants for cooking of meals and bathing, say four women to 120 children.”

One is impressed by the efficacy of these figures as they are applied in the open-air schools of Europe. Indeed, the original school, established at Charlottenburg, Germany, in 1904, was essentially along these lines. The site is rolling and attractive and is located in a beautiful pine

forest. The buildings are inexpensive, but are planned to furnish facilities for the different features enumerated as characteristic of open-air schools and comprise quarters for class-rooms, kitchen, dining-room, resting-shed, accommodations for doctors and nurses. There is provision for gardening, each child having his own allotment. There is a place for the pets and these are considered almost as important as any other feature of the school. Then there is a portion of the ground set apart as a playground where the children have a chance to play games of their own choice and to use the allotment in any way they see fit. Another feature is the open-air gymnasium, used alternately by boys and girls, where the children, clad only in trunks, have an opportunity for daily sun and air baths. The

establishment of the school was finally submitted for approval to the Imperial Government itself.

Beneficial results followed immediately and many pilgrimages were made to the school by the German people, and from other countries as well. Most European open-air schools have followed the general outline of the Charlottenburg schools. The value of appropriate sites and of making it possible to furnish such features as gardening, manual training and other lines of work which apply stimuli in natural and appealing ways to the child, are considered of first-rate importance. They strive in every way possible to make nature an ally in the great task of preparing children for life.

The open-air school was accorded instant ap-



FRANCIS W. PARKER SCHOOL, SAN DIEGO, CALIF.

An open-air school of the convertible type

surrounding forest furnishes ample opportunity for nature study walks, school journeys and for general observation of change of seasons, plant and seed distribution and for the study of plant and animal life. This school, and the needs and conditions of children which led to its establishment, were the subject of most thorough investigation and study.

When the German people found that there were children in the schools who were not making satisfactory progress, children whose physical condition was such that the chances for usefulness, happiness and efficiency were not promising, they set out with that characteristic efficiency to study the causes and to create resources to meet the needs. There were numerous conferences between school-teachers and school doctors, municipal authorities, and the proposition for the

precipitation and a hearty welcome in the United States. Anti-tuberculosis forces in particular recognized in its discriminating and resourceful régime a piece of machinery that would meet the needs of children whose health problems they were earnestly endeavoring to solve. Almost every community had both lists of children who needed some such program and also its group of workers who were casting about for the resources and agencies to give them proper health opportunities. In most instances, the work in this country had its inauguration through private initiative. The Elizabeth McCormick Memorial Fund has made open-air school activities and propaganda a prominent feature of its work because of the great possibilities it offers for service to children.

Providence, Rhode Island, led the way with the first open-air school in the United States in 1908. The beginnings there were fairly typical of the efforts in this field of most American communities. A little band of workers, inspired by the experiment in Charlottenburg, had determined that some of the children under their care must have the advantages of the open-air school. They canvassed their whole community for a site. They considered the availability of porches and unused buildings and seriously contemplated

thus equipped which enabled them to commence work in the United States and to get excellent results.

New York City made its beginning in an unused ferry-boat. Here again a little resourcefulness provided a plant which in the hands of the people who had this work so strongly at heart furnished opportunities for successful work.

The first of the Elizabeth McCormick open-air schools in Chicago was located on the roof of the Mary Crane Nursery. A tent-like structure,

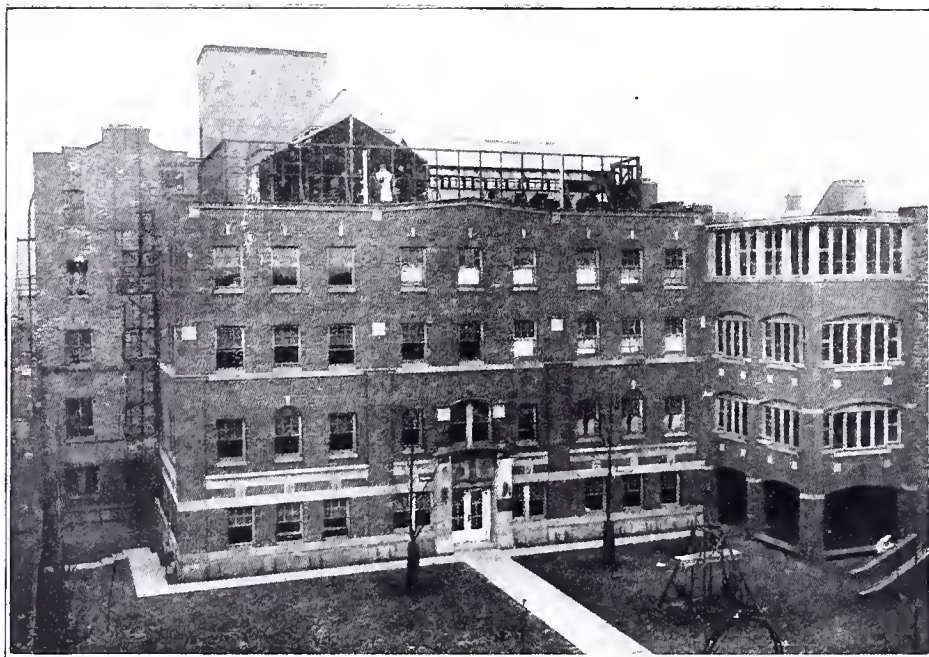


FRANCIS W. PARKER SCHOOL—WILD FLOWER-BED

Note the accordion doors throwing open one entire side of classroom facing court. Windows are on opposite side. Especially adapted construction for warm climate

remodeling an old stable as a sort of make-shift manger for the birth of this new work. Finally, the progressive school board of Providence furnished them with an unused school-house. The window space was enlarged on one side and the windows hinged at the top so as to admit plenty of fresh air. Quarters for kitchen and dining - room service were provided at comparatively slight expense. A plant was

made of asbestos board, built originally for a summer fresh-air station for sick babies was pressed into service. A wire enclosure was placed about the roof, giving space for recreational opportunities and a place for a rest period. A second school is now provided for on the roof of the Hull House Boys' Club connected with the first by a bridge across an alley. A similar tent-like structure one story



EXTERIOR OF MARY CRANE NURSERY SHOWING ELIZABETH McCORMICK OPEN-AIR SCHOOL ON ROOF; SHELTER TENT IN FOREGROUND, STUDY TENT TO THE RIGHT

high, with windows on all four sides and hinged from the top, furnishes the school-room. A resting-shed adjoins this structure. The frame is of gas-pipe to meet fire ordinances, and is covered with canvas. Rooms for toilets, showers, and the storing of blankets and equipment are on the same roof and connected with the resting-shed and the tent by a canvas-covered passage-way. The kitchen and dining-room are in the top story of the same building, one flight below. The plant on both these roofs was an adaptation, for neither roof was planned originally for any such purpose. The site lacks the outdoor features that characterize most of the European open-air schools. However, in winter the roof is given a cheerful and attractive appearance by the use of Christmas trees, which are placed about the outer enclosure. Since the children cannot be taken to the forest, a miniature forest is brought to the children. In summer a roof-garden gives the children an opportunity for raising both plants and vegetables, and furnishes some opportunity for out-door activities.

The first open-air school in St. Louis, Missouri, was an inexpensive shack-like structure on the outskirts of the city. This building provided the class-room, kitchen and dining-room, lockers and showers. The ample yard gave a chance for individual garden allotments and outdoor work. This simple plant, plus a teacher who had zeal for the work, made it possible to conduct a most successful open-air school. In Hartford, Connecticut, the anti-tuberculosis society used tents with double canvas tops and lifting sides for their first open-air school work; Waterbury, Connec-

ticut, remodeled a stable; Kenosha, Wisconsin, built a simple structure with wooden sides and canvas top. Many other cities began their work in the same humble way and still other communities are inaugurating open-air school work in structures of a similar kind.

The largest development in this field in the United States has been through the use of open-window rooms in school buildings. It is best to have two exposures and the southeast or the southwest corner of the building is preferable. A corner location gives the possibility of a cross-draught and these exposures are advantageous for both light and air. Alterations are sometimes made in such rooms to allow greater window space and to give a different adjustment to the windows. Some windows are pivoted at the top and bottom, thus making it possible to open them full length; in other cases they are pivoted from sides so that they open similarly to the austral window.

The first of the Elizabeth McCormick Open-Window Rooms in Chicago was in the Franklin School, which is in one of the congested parts of the city. The room was on the first floor and on the south side of the building. It had four windows. The lower half of these windows were kept open. The desks were removed and tables and chairs substituted. The cots were placed in the rear of the room. A small room adjoining was fitted up with a gas-plate and sink and tables, and was used as the kitchen and dining-room. There are now twenty such classes in Chicago. The children in the open-window rooms are given the same medical and nursing care, the rest period, extra clothing and the same kind of food as the children in the open-air



REST PERIOD, ELIZABETH McCORMICK OPEN-AIR SCHOOL ON THE ROOF

schools and the results are equally as satisfactory. Substantially the same class of children are cared for as in the open-air schools.

A canvas ventilator shown in one of the pictures of this article is used in most of these rooms. It resembles an inverted awning. It is inexpensive and is so arranged that the canvas is easily removed when it needs laundering. This ventilator allows a wide intake, the window standing half open, but it prevents a direct current of air from blowing on any child.

The open-window rooms for normal children has been widely adopted in New York City, where there are now more than two hundred and fifty classes. In these classes there are the usual number of children to each teacher. There is no supplementary feeding, no rest period, and no extra clothing is provided. The children

wear their street wraps in cold weather. When such a room is opened, an understanding is had between the teacher, the children and the parents. Those electing to go to school under open-window conditions are given the privilege. Thus everybody understands and makes provision for the different circumstances. The number of such rooms is constantly increasing because the teachers, the children and all concerned find that beneficial results follow. New York has sixty-five rooms for anemic children. In these rooms they have twenty-five children to the teacher. Cots and extra clothing are provided and consideration is also given to the question of meals which are provided by the parents.

In New York City the Fresh Air Classes for anemic children are for the most part in the



"FOR WE HAVE FRESH AIR THAT GIVES US CHEEKS LIKE THE ROSE"
Elizabeth McCormick open-air school

school building. In a few exceptional cases the classes are conducted on the roofs of buildings or in park pavilions, but the scarcity of park pavilions and the unusually large expense of special structures on the roofs make this type the exception rather than the rule. Chiefly therefore as a matter of economy and convenience, use is made of large corner rooms in school buildings. Wherever necessary a part of the wall is knocked out and windows put in. The type of window used in these rooms is shown in one of the illustrations in this article. The windows are made in three sections and pivoted to swing horizontally. This serves the purpose of a diaphragm for causing circulation and is a good rain shield in case of stormy weather. The upper two windows are operated by a single ratchet. The lower window is operated by a ratchet of its own. This is done so that in case of driving winds the lower windows may be kept shut while the upper ones are open, and thus prevent drafts. Rooms of this sort can be made ready at cost of \$150 to \$300, depending on the changes that are required to be made. A rule of the Board of Education requires that one such class-room shall be provided in every new school building.

The use of the roof in New York City is illustrated in one of the cuts shown in this article; this class-room is built on the roof of the Carmine Street Baths, just across the street from Public School 95. Various reasons combined to make this an expensive project. Owing to the fire-

proof construction of the building, the Building Department required that the superstructure should also be fireproof. The Art Commission also took a hand in the matter and insisted on certain artistic features to make the roof building consistent with the rest of the structure. As a result it cost approximately \$7,000 to erect this class-room for 20 children, whereas for the same amount 20 or 25 classes could have been provided in corner rooms in school buildings. One feature of this particular structure, however, is of interest, namely, the construction of the windows which open out on the roof, as shown in the cut. These windows instead of being built with two sashes are built with three sashes. By this means two-thirds of the window opening is secured instead of only one-half, and besides it makes it possible to raise the window to such a height that the children and even the teacher can easily pass under it. The windows, as will be noticed, open down to the floor and by means of the three sashes are practically turned into doors.

There has been considerable discussion about appropriate school furniture for these rooms, and in New York City the Board of Education has adopted what is known as the Moulthrop Chair. This is a chair and desk combined, as is shown in the photograph on page 21. They come in various sizes, that is various heights as regards the seat of the chair, but the desk itself is adjustable, which makes it possible to use the same



OPEN-WINDOW ROOM AT MOSELEY SCHOOL, CHICAGO

The windows are kept open, the children being protected from drafts by a canvas ventilator, resembling an inverted awning



TYPE OF FRESH-AIR ROOM REQUIRED IN ALL NEW SCHOOL BUILDINGS IN NEW YORK CITY.
THE WINDOWS OPEN AND CLOSE ON RATCHETS AND ARE EASILY CONTROLLED.



OUTDOOR CLASS-ROOM ON ROOF OF PUBLIC BATH BUILDING IN NEW YORK, SHOWING
ORDINARY WINDOWS MADE WITH THREE SASHES.

chair for children of various sizes by simply adjusting the desk. Below the seat of the chair is a large drawer for books, pencils, etc. These chairs can be equipped with "silent domes" which makes it very easy to slide them back and forth across the floors. Even the smallest children can move their own seats so that when the time comes for rest period it is a simple matter for the children to remove the chairs and place the cots in the room.

As a rule it is possible to arrange for open-window rooms in school buildings. The shift of the school population often leaves school-houses only partially used and sometimes practically empty. Even where the school population is normal for school accommodation it is usually not difficult to arrange for an open-window room. When this can be done it saves the expense of a special building. These open-window rooms are thus directly under not only the school régime, but are a part of the plant. A number of the Elizabeth McCormick Open-Window Rooms are in buildings where the shifting of the school population has left unused rooms; where space is thus available it is desirable to use one room for class-room, another for the dining-room and a third for the sleeping-room.

Dr. I. Ogden Woodruff, Medical Director of Open-Air Schools in New York City, writes us that he prefers open-window rooms to the out-door classes. He says:

"It is very difficult to construct an outdoor class-room without considerable expense and to arrange it so that it will be satisfactory for both warm and cold weather. . . .

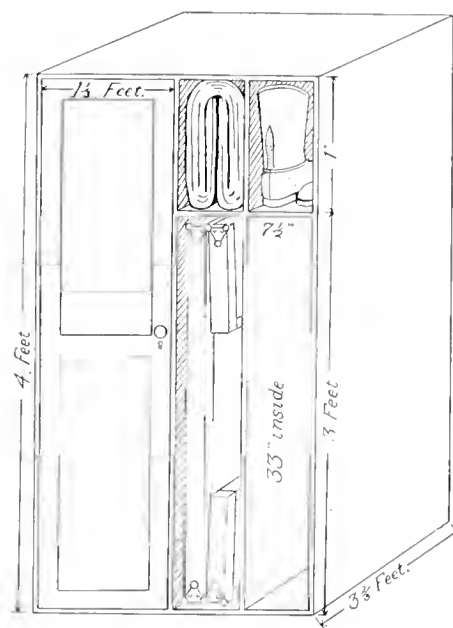
"The type of class-room required in warm weather is one where there is a maximum amount of air movement and in which the room is so constructed as not only to shut off the sun's rays, but with space to act as an insulator to prevent the air underneath the roof from becoming too hot."

All these are considerations to have in mind when the problem of building and equipping an open-air school confronts a community.

On the other hand there are some advantages in having an open-air school apart and distinct from the regular school-room. It is sometimes easier to break away from the usual formal régime and rigidities of the school work when it can be thus apart. It is not an unfamiliar sight to see children in open-air schools and open-window rooms at rest on a cot during the whole day. Their work, too, is characterized by a greater freedom of movement and is usually more along motor and sensory lines. The teacher in these classes is in touch with the nurse, the doctor and the social workers and comes to know the child's physical as well as his mental characteristics, and is acquainted with his environmental conditions. She soon views with entire equanimity these departures from the usual formality and rhythm of the regular school work. She

knows perfectly well that when the child is restored to his normal condition, when his handicaps are removed and he is given a chance, he will take care of his school work as a healthy child solves the misgivings of the anxious mother on the question of appetite.

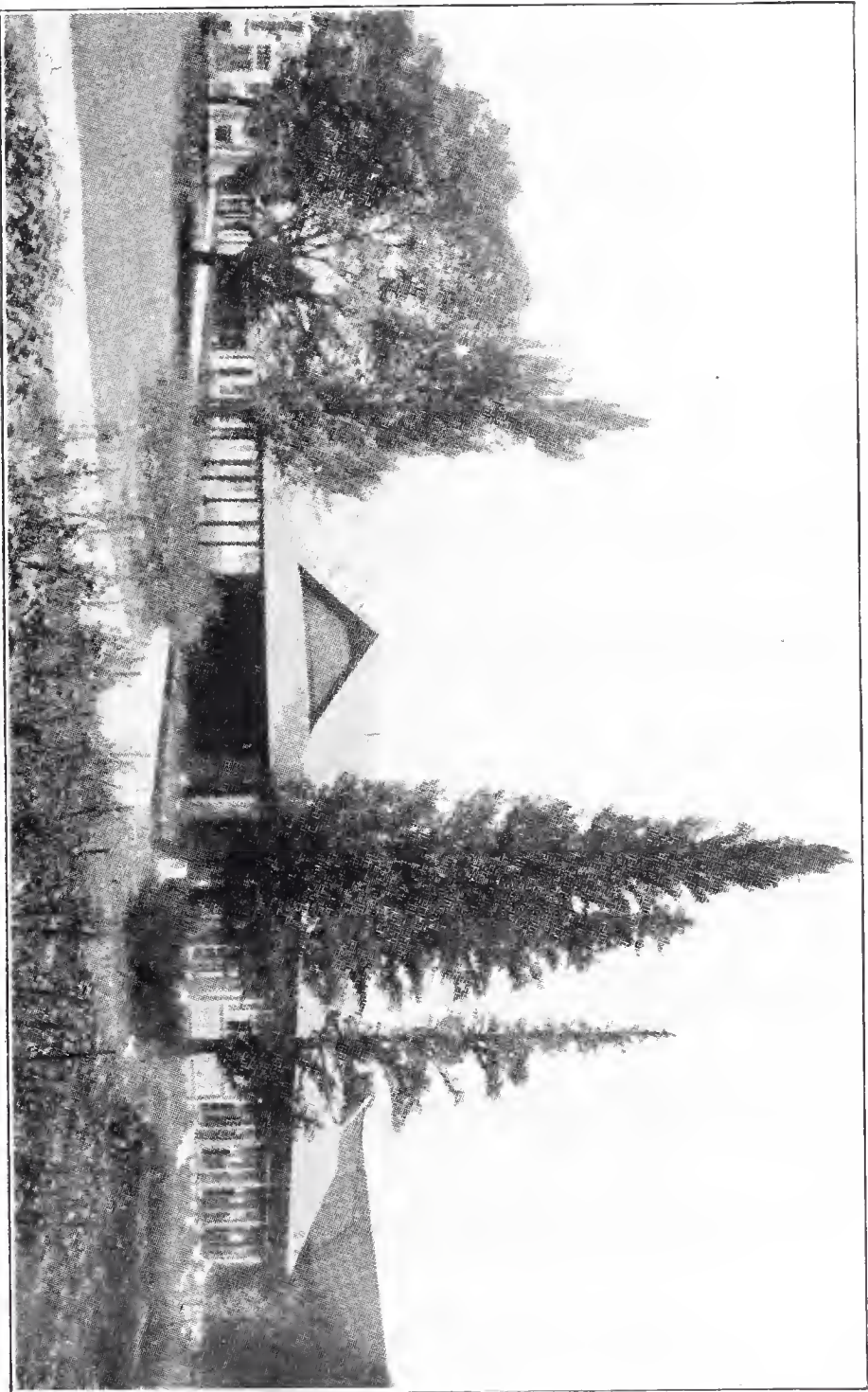
The open-air school movement has now passed the pioneering stage. Cumulative evidences of beneficial results have followed each new school since Charlottenburg led the way in 1904. Their first reports tell of improvement in the general appearance of the children, and these are attested by the results of the individual physical



LOCKER DEvised BY THE ST. LOUIS OPEN-AIR SCHOOL FOR THE STORAGE OF COTS, BLANKETS AND ESKIMO SUITS

examinations. Improvement was manifested in appetite, attention, and general temperament. The tabulated figures showed that among one hundred and seven children cared for, there was a decided improvement or complete cure in seventy-three. There was also increase in weight, in general resistance, greater vigor and possibility of sustained work. Hemoglobin tests also showed a marked improvement in the condition of the blood. Some of these gains, such as weight, blood count, height, etc., can be measured and set down. It is more difficult to indicate the increased happiness, the better mental vigor and courage of boys and girls, but all these were apparent to teachers and visitors, and notably to parents.

Similar results followed in other open-air schools in Europe and have also resulted from each open-air school started in the United States. This is not at all to be wondered at. Indeed, it is exactly what should be expected, for this



ST. LOUIS, MISSOURI, OPEN-AIR SCHOOL.

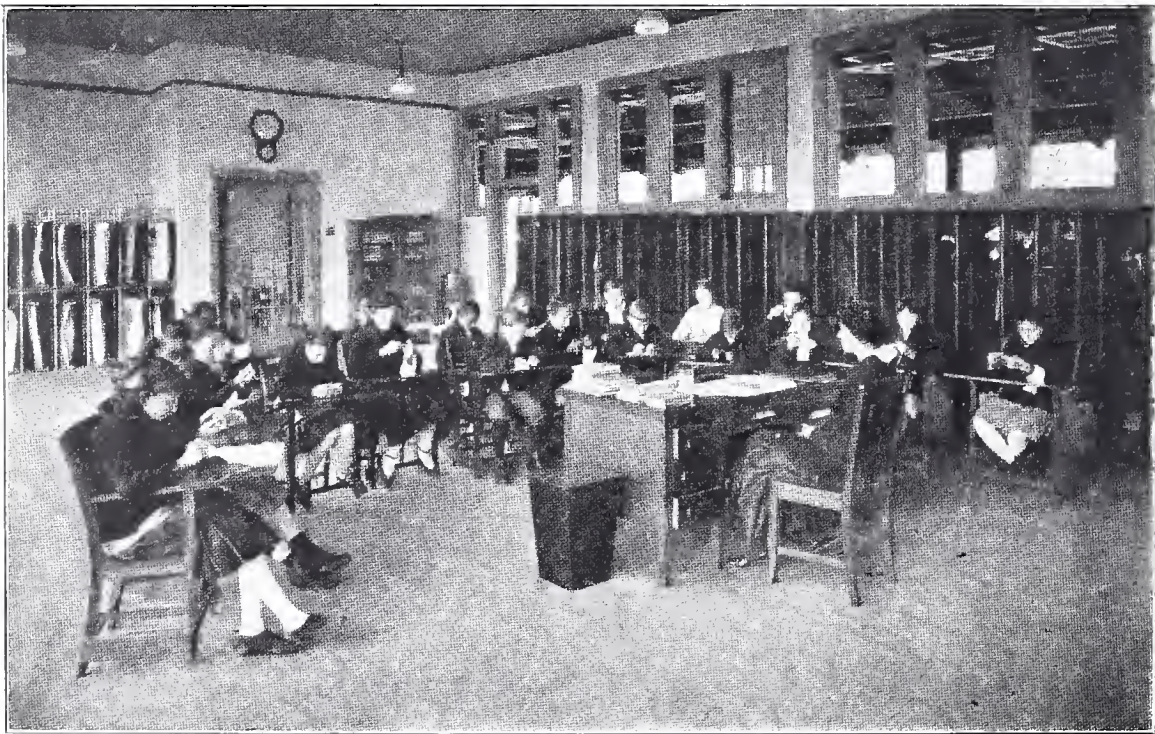
work, when properly done, takes the child who is under-nourished and below par and applies to him a régime which is sensitive to his individual condition and needs. It supplies food, rest, medical care, nursing service; it attempts to adjust the home and to articulate it as helpfully as possible with the school. It enables the teacher to individualize and give him time and attention at the points where he is weak. It ceases to urge boys and girls to tasks for which they are at the moment not fitted. It tries to get them into condition to run the race before it expects them to win.

There are now about one thousand open-air and open-window room classes in the United States and the number is constantly increasing. The open-air school has demonstrated its usefulness and made a place for itself in the school system. Many cities have already given substantial evidence of this fact in new structures built and equipped for open-air school work. Rochester, New York, has a fine new building located on ten acres of park land granted by the city. Here they have a plant that was designed for the purpose and they have a setting which puts the child in touch with the out-of-door features dear to him and which help in his process of education and his physical up-building. St. Louis, Missouri, has moved from the quarters where it made its beginning to a fine site adjoining the teachers' college. An old residence located on a splendid lot was secured

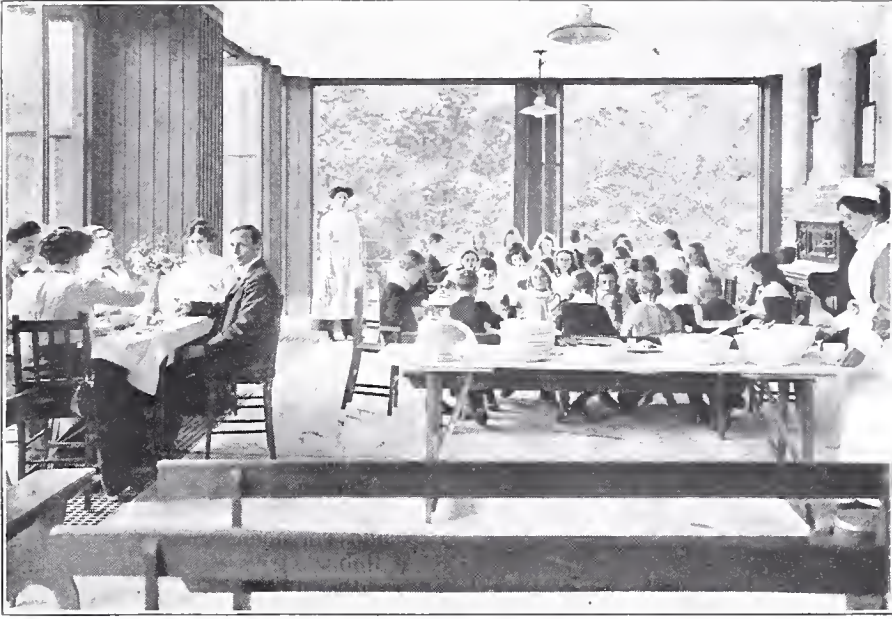
and remodeled for the administrative purposes of the school, and back of this and connected by a covered passageway are a series of class-rooms. Its proximity to the teachers' college gives the students who are preparing for the teaching profession an opportunity to get a fully rounded view of the needs of children. This feature is worthy of imitation. Some such laboratory for an all-around understanding of children should be a part of every normal school and teacher training institution in this day that is calling for the new preparedness for citizenship.

Detroit, Michigan, now has an open-air school built especially for the open-air work. So have Columbus and Toledo, Ohio. In Toledo some of the children are given both night and day care. Those who most seriously need attention and whose home conditions cannot be controlled are taken in residence for some weeks or months, according as conditions determine. One of the unsolved problems in this field is the child who does not quite need sanitarium care on the one hand (perhaps because we have not yet fully realized that the care of children demands something a little different from the care of adults) and who cannot successfully be dealt with at home, on the other hand. There is in the aggregate a large number of such children. Every community has them.

The Frances F. Parker School in San Diego, California, a one-story structure built about a square, furnishes an example of convenient and



ST. LOUIS OPEN AIR SCHOOL, SHOWING LOCKERS UNDERNEATH WINDOWS. THE ENTIRE FRONT OF THIS ROOM MAY BE OPENED.



DINING-ROOM AT UFFCULME OPEN-AIR SCHOOL, BIRMINGHAM, ENGLAND

In well equipped open-air schools provision is made for separate dining-rooms as well as kitchens

attractive architecture. This general plan has already had a large development in California cities. This building, with its garden features, makes not only an attractive school home for the children, but lends itself to efficient work by the teachers. Oakland, California, has had a large development in the one-story school building with the corridor and the hollow square. These buildings are most attractive and serviceable for community centers as well as for efficient school work. The open corridors and the accordion windows used in many California schools make it possible to have school-rooms practically open on at least one side, and often

two sides exposed to the direct air. In many of the western and southern states there is practically no temperature problem and no reason why all schools should not be open-air schools all the year round.

The architecture of school buildings has already undergone many changes within a few years and greater changes are doubtless still to come. There is no reason why these children's buildings, where life is molded and formed and impressions gained, should not be as beautiful, as carefully planned, and furnished with as much taste as the club-houses on golf-courses, country club, woman's club buildings and other similar



SLEEPING-BAG AND COT USED IN CHICAGO OPEN-AIR SCHOOLS



ESKIMO SUIT

structures. Above all, they should give the children healthful working conditions and recreational facilities indoors and on the playground.

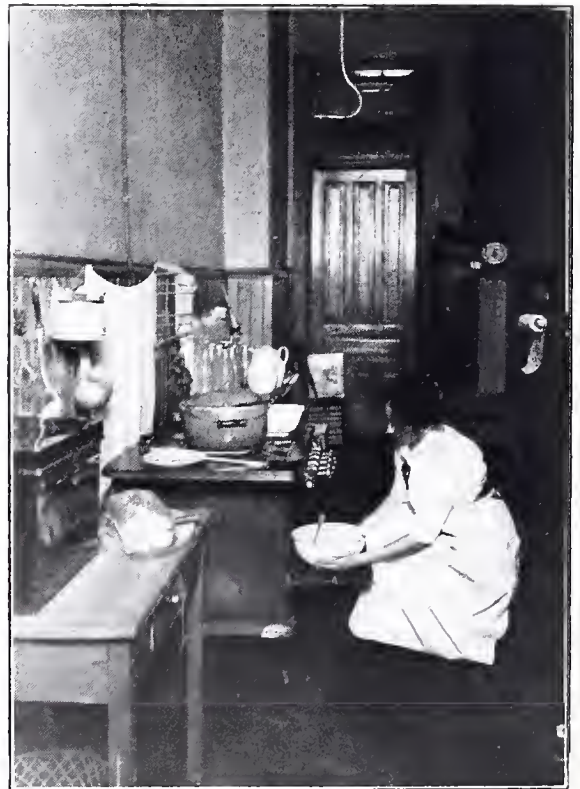
The Eagle school, in Cleveland, Ohio, is an example of a modern school-house adapted for open-air school purposes. As will be seen from the illustration on page 5 the whole top floor of this building is arranged for open-air school work.

In Boston and many other places new school buildings are provided with a certain number of rooms built expressly for open-window room work. The chief engineer of the school board of Chicago has made the suggestion that when school-houses are built or when the heating or ventilating plants are to be remodeled in old buildings, provision for open-window room work can be made that will remove any possible objection from janitors or engineers, by making provision for direct radiation in the room or rooms to be used in this way. He suggested that radiators connecting directly with the heating plant and so arranged that they can be turned off or on by the teacher, and the room equipped with the regular heating and ventilating system as well, would make it possible to use such rooms in the ordinary way or as open-window rooms, and at a cost of something like \$200 per room. He said that this arrangement might be made with a whole tier of rooms connected with a common vent-stack running from the top to the bottom of the building.

The equipment for open-air schools outside of the regular academic and manual training work

consists of extra clothing, cots, sleeping blankets and bags, dining-room and kitchen equipment. In Chicago and in many other open-air schools the Eskimo suit is used. This is made of woolen blankets and costs about \$5.15 for a two-piece suit. This suit has the advantage of giving the child freedom of movement. In Chicago a lumberman's felt boot, reinforced with a canvas sole, is worn in the coldest weather. Then there is a sitting-out bag, which is made from a long strip of heavy canvas lined with blankets, doubled over at the bottom so as to form a pouch into which the children thrust their legs. Some of these bags come only to the waist, others to the shoulder line, but the best is that which folds about the shoulders like a cape. With the sitting-out bag are usually worn a cap, overcoat or sweater, warm overshoes, and mittens. The sitting-out bag is warm, but it obstructs free movement.

The cot has been found to be much more satisfactory for the rest period than camp chairs. It gives the child a full reclining natural position and does not cramp or distort the vital organs. The cot used in Chicago, as illustrated on page 19, is fifty-two inches long, has hinges, folds at both ends and is reinforced with a piece of canvas under the hips and shoulders. It is an evolution resulting after a good deal of experimentation. It is very satisfactory and costs \$2.60.



AN IMPROVISED KITCHEN

A cloak room adjoining the recitation room fitted up for a kitchen in Chicago Open-Window Schools. This simple and inexpensive rearrangement has proved satisfactory

The cost of kitchen and dining-room equipment varies with different schools. In Chicago there are two substantial feedings each day, and soups, stews and other hearty dishes are a part of a varied bill of fare. In the kitchen there must be a sink and gas-stove, pots, pans, kettles and other cooking utensils. In the Elizabeth McCormick Schools in Chicago this costs an average of \$95 to the school. The dining-room equipment costs about \$100 per school. The dishes are inexpensive willow ware. These estimates are based on a class of twenty-five to thirty.

The open-air school, especially in the United States, has thus far concerned itself with the physically below-par child. It has concerned itself with him because his need is greatest and because the community will respond to special efforts in his behalf. The open-air school is an instrumentality which has undertaken to give children that painstaking, discriminating, constructive care which will give them a real chance. The movement aims to go further than this, however, for it stands for an attitude which ought to be made applicable to 100 per cent. of the school children. They should all have their fresh air and hygienic rights and should be given facilities for acquiring and promoting that physical fitness which the new duties and new demands will place upon them to-morrow. Manufacturers are practicing preventive maintenance with their machinery and plants. We should not exercise a less intelligent attitude toward those who on the to-morrow will operate the machines. The leaders of the open-air school movement want the work to go on until all the



SITTING-OUT BAG AND MOULTHROP CHAIR ADOPTED FOR USE IN FRESH-AIR CLASSES IN NEW YORK CITY. NOTE ADJUSTABLE TOP. THERE IS A DRAWER FOR BOOKS IN THE SEAT



LUMBERMAN'S
FELT BOOT
REINFORCED
WITH HEAVY
CANVAS



FELT-TOP BOOTS WITH
LEATHER FOXING

children needing such care—and it is estimated that there are 1,000,000 of them in this country—have it accorded to them, and furthermore, to see that sunshine, fresh air and their full health rights are accorded to 100 per cent. of the school children.

As we have stated before, a little boy in one of the Elizabeth McCormick open-air schools in Chicago put the whole case when he brought a companion to the doctor and said, "Say, doctor, how sick's a feller got to be to get in this 'ere school?"

Inquiries about open-air schools, equipment, results, etc., addressed to the Director of the Elizabeth McCormick Memorial Fund, 315 Plymouth Court, Chicago, Illinois, or to the National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-second Street, New York City, will be gladly answered.

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BADLY VENTILATED, OVERHEATED SCHOOL ROOMS.

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IF HE GAIN THE WHOLE CURRICULUM
♦♦♦ AND LOSE HIS HEALTH?♦♦♦

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